MUNICIPAL ENGINEERING

INDEX

July — December, 1911.

P373-4

VOLUME XLI.

MUNICIPAL ENGINEERING COMPANY
INDIANAPOLIS, IND.
NEW YORK, N. Y.

P373-4

INDEX
MUNICIPAL ENGINEERING

E.—Editorial Comment. Q.—Question Department. I.—Current Information.
M.—Machinery and Trade. W.—From Workers in the Field.

Accounting, Costs and Contracting Practice. E. 125
American Association for Standardizing Paving Specifications, The..... 488
American Road Builders' Convention.... 486
American Society of Municipal Improvements 394
Asphalt, Cost of Macadam and Asphalt Paving. Q. 43
Asphalt Paving, Books on. Q. 44
Asphalt Paving in Milwaukee, Reduction in Cost of. Q. 48
Asphalt Pavement, Another Machine for Mixing. W. 375
Asphalt Paving Materials, Concrete Mixers for. Q. 211
Asphalt Pavement, Standard Tests for Asphaltic Cement for. By James W. Howard, New York City..... 342
Asphalt Plant, Municipal. Q. 374
Asphalt Paving Plant, A Portable. M.. 407
Asphalt, Rock, Street with Continuous Asphalt Surface. W. 215
Assessment Maps, Method of Maintaining and Correcting. W. 292
Austin Dam, Failure, Needed Investigations of. E. 456
Automobile Traffic and the Road. M.. 155

Barrington, R. I. Experimental road.. 439
Bitucrete. W. 376
Bitulithic in California. M. 154
Bitulithic Patents, Michigan, Decisions on. L. 379
Bitulithic Pavement, Durability of. Q.. 43
Bituminous Concrete Pavement. By H. B. Lykken, of Grand Forks, N. D..... 345
Bituminous Concrete Pavement. By George C. Warren, Boston, Mass..... 349
Bituminous Paving Mixtures, Manipulation in Analyzing. Q. 130
Bituminous Road Builders, Portable Plant for. M. 154
Bituminous Road Material, Methods of Distillation. Report of Committee to American Society for Testing Material. 190
Bituminous Road Material, Standard Tests for. By Logan Waller Page, Washington, D. C. 110
Bituminous Road Materials, The A. P. Spreader For. M..... 374
Bituminous Surfaces for City Macadam Streets. By J. C. Travilla, St. Louis, Mo. 285
Bituminous Wearing Surface for Concrete Pavement. W. 215
Blueprint, How to Treat Overprinted. Q. 373
Books for Engineers..... 481
Books on Accounting for Contractors. Q. 129
Books on Asphalt Paving. Q. 44
Books on Concrete Construction. Q.... 128
Books on Gas Construction. Q. 45
Books on Water Rates and Water Works Management. Q. 291
apolis, Ind. 338
Boulevard Improvements in Chicago.. 144
Brick Pavements, Bituminous and Cement Fillers For. W. 51
Brick Pavement, Note and Queries on Grouted and Sand-Filled. By Maury Nicholson, Birmingham, Ala. 269
Brick Pavement, Contraction and Expansion of. By Will P. Blair, Cleveland, O. 272
Brick Rattler, The Standard. 403
Brick Road Construction About Cleveland and Buffalo..... 364
Brick Road, Transverse Expansion Joint in. W. 49
Brick Sewer in Newark, N. J., Rebuilding an Old. By Edward S. Rankin, Newark, N. J. 284
Brick with the Mathews Gravity Carrier, Laying. M. 232
Budget Exhibit, New York..... 312
Bureaus of Municipal Efficiency..... 309
Bus Transportation, Motor..... 476

Calcium Chloride in Road Construction 401
Calcium Chloride, Dust Prevention With 313
Canal for Buffalo, N. Y., A Sanitary and Power. W. 376
Carrier, Laying Brick with the Mathews Gravity. M. 232
Catch Basins and Sewers, Cleaning by Pump. Q. 43
Cement Industry in 1910, The. M. 158
Cement Plant, A New Portland. W. .. 216
Cement Testing Machine of Maryland, Geological Survey. W. 293
Cement Workers, Patents on Apparatus and Tools for. M. 160
Chara, A Water Purifying Plant..... 301
City Planning, The Relation of Technical Men to. 453
City Planning in Vienna..... 21
Civic Association, The American..... 488
Commission Government in Trenton, N. J. 313
Conduit System, A New Electric..... 306
Concrete Base for Steam Railroad Track. W. 132
Concrete Block, The Fisher. M. 408
Concrete Culvert, Collapsible Forms for. M. 406
Concrete Construction, Books on. Q... 128
Concrete Dump Bucket, A New Controlable. 491
Concrete for Street Paving, Mixing. W. 50
Concrete Foundation under Steam Railway Track..... 52
Concrete Mixers in Chicago, The Eclipse.. 492
Concrete Pavements, Bituminous Wearing Surface for. W. 215
Concrete Pavement with Bituminous Wearing Surface. W. 376
Concrete Poles, Cities Using Reinforced. Q. 374
Concrete Sidewalks, Steel Forms for. M. 324
Concrete Walk, Metal Monuments In. Q. 212
Congress and Exposition, The Municipal 315
Contract, Competition in Public. W. .. 136
Contracts, Competition in Public. E. . 205
Contracts, Competition in Public. E... 39
Contract for Indefinite Period Cannot Be Made By City Council..... 297
Contracts for Public Improvements, Letting. W. 213
Contracting Practice, by DeWitt V. Moore, Indianapolis, Ind.....
.....1, 93, 174, 253, 337
Contracting Practice and Costs Accounting. E. 125
Contraction and Expansion of Brick Pavement, By Will P. Blair, Cleveland, O. 272
Contraction and Expansion in Wooden Block Pavement. W. 294
Contractors, Books on Accounting for.. 129
Contractor, Delay of C. in Beginning Work. Q. 44
Contractors' Power Pump. M. 402
Cost Distribution, Labor, Pay Roll System. By DeWitt V. Moore, Indianapolis, Ind. 337
Crosby, W. W., Baltimore, Md., Problems of Road Construction..... 447
Crusher, The Jeffrey Single-Roll. M... 323

Tech of Carn Lib Pittsburg

62805 v.41

Curb and Gutter and Pavement Measurements. Q. 210
Culverts, Collapsible Forms for Concrete. M. 406
Curve Resistance to the Flow of Liquids, A Theoretical Formula for, By Philip J. Markmann, St. Louis, Mo... 263

Dam Failure, Needed Investigation of Austin. E. 456
Decisions of the Higher Courts..... .....140, 217, 296, 378, 462
Depreciation in Cast Iron Pipe. Q. ... 211
Distillation of Bituminous Road Material. Report of Committee to American Society for Testing Material.... 190
Drainage Ditches, How to Prevent Silting of. Q. 130
Drainage of Flat Streets. Q. 46
Dust and Its Prevention on City Streets. By Prof. Arthur H. Blanchard, Providence, R. I. 114
Dust Prevention and Road Preservation, Experiments in. I. 146
Dust Prevention with Calcium Chloride 313
Dust Preventive, English Use of Tar as a..... 63
Dust Problem in Great Britain. I. 144

Edy. John M., Billings, Mont., Practical Road Building..... 432
Electric Plants, Milan's Municipal..... 65
Electric Lighting Station for Small Towns, Equipment of, By Carl D. Hoskins, Schenectady, N. Y..... 450
Electric Lighting System, Investment in Small. Q. 43
Electric Station Power Rates and Economy, Central. W. 52
Electrolytic Treatment of Sewage at Oklahoma City..... 460
Engineering Exhibition at Baku..... 478
Engineering on Good Roads, Cost of. Q. 290
Engine, The Atlas Crude Oil..... 491
Ethics for Consulting Engineers, A Code For..... 310
Expansion and Contraction of Brick Pavement, by Will P. Blair, Cleveland, O. 272
Expansion and Contraction in Wooden Block Pavement. W. 294
Expansion Joint in Brick Road, Transverse. W. 49

Fillers for Brick Pavements, Bituminous and Cement. W. 51
Filtration Plant at Toronto, Ontario, The Water..... 445
Financing of Public Utilities. By Robert J. Graf..... 203
Fire Apparatus, Automobile Chemical, at Horristown, Pa. M. 321
Fire Apparatus, Automobile..... 300
Fire Apparatus, Motor. By Louis Vehrers, Charleston, S. C..... 222
Fire Apparatus, A New Motor Drive for 229
Fire Apparatus, Motor Propelled, by Louis Almgren, Jr., chief of the fire department of San Diego..... 59
Fire Apparatus, the Boyd Automobile. M. 157
Fire, Consumption of Water in Bangor 302
Fire Department, Improvements of Boston 303
Fire Department Extension Proposed in New York..... 312
Fire Department, A European (Hamburg) 58
Fire District for Boston, A Metropolitan 303
Fire Engineers, International Association of..... 397
Fire Hose, Specifications for..... 59
Fire Protection by Gas Engines..... 29
Fire Steamers and Automobile Fire Engines, Comparative Tests of..... 300
Flow of Liquids, A Theoretical Formula for the Curve Resistance to. By Philip J. Markmann, St. Louis, Mo. 201-263
Forms, For Concrete Sidewalks, Pressed Steel. M. 324
Formula for the Curve Resistance to the Flow of Liquids, A Theoretical. By Philip J. Markmann, St. Louis, Mo. 201
Franchise Ordinance of Los Angeles... 306
Freight Transportation Within City... 310

Garbage Collection and Disposal, Information About. Q. 291
Garbage Disposal in Montclair, N. J. I. 147
Garbage Incinerator and Steam Generator, A Municipal. M. 405
Garbage Plant, Cleveland, to Exhibit. I. 147
Garbage Plant at Paterson, N. J..... 483
Garbage Problem, The Pittsburg. G... 61
Gas Company's Stock at Premium, 60-Cent 303
Gas Construction, Books on. Q. 45
Gas Engines, Fire Protection by..... 29
Gas Plant, Profit Sharing in Municipal.. 475
Gas Plant, A Small Town..... 493
Gas Producers and Gas Pumping Plant at Manchester, Mass. M. 229
Gas Rates in Chicago. E. 206
Gas Rates in Chicago..... 228
Gas Rate in Milwaukee Reduced..... 225
Gas Supply of Manchester, Eng., Municipal 225
Gas Undertaking, British..... 305
Grades, Best Pavement for Steep. W.. 460
Grades, Street, In Small Cities. Q..... 458
Gravel, Screened vs. Pit Run..... 460
Grand Rapids, Mich., Municipal Water Purification Plant. By J. W. Armstrong, New York City..... 429
Gutter for Steep Dirt Road. Q. 289

Highway Engineering Instruction at Columbia University..... 152
Highway Improvements, The American Association For.150, 226, 288, 314, 369, 484
Highway Laws of Pennsylvania..... 466
Highways in England..... 112
Highways, The Modern in Allegheny County, Pa. I. 145
Highway Organization, The Ohio State 276
Highways, State..... 304
Home Rule, Central Utilities Commission and. E. 369
Housing, The Garden City Movement in England..... 310

Ice Plant, Water Works and Electric Light at Loveland, O. By Frank P. Perkins, Buffalo, N. Y..... 198
Illuminating Engineering Society..... 316
Illumination of Streets and Open Places, The. By E. Darrow, consulting Engineer..... 34
Improvement, Authority to Expend Money For. Q. 373
Improvement and Contracting News.... .....111, 161, 257, 326, 412, 495
Incinerator, The Harris Garbage Incinerator and Steam Generator. M... 405
Incinerator, The Milwaukee Refuse. I. 148
Inspector's Notes on Sewer Work. Q.. 130

Johns-Manville Bldg., The..... 306

Laundry, Cincinnati's Municipal..... 480
Lead Wool for Jointing Water Pipe. M. 154
League of American Municipalities.... ....227, 312
Lewis, Nelson P., New York City. Adaptation of Roads and Pavements to Local Conditions..... 426
Light, The Development of Electric.... 472
Light in Hastings, Ornamental. I..... 146
Light Plant at Holland, Mich., Municipal Electric..... 305
Light Plant, Sharon, Pa. Contemplates a Municipal..... 471
Light, Peoria, Ornamental. M. 236
Light in Pittsburg, Municipal. I. 146
Light, Water Works and Ice Plant at Loveland, O. By Frank P. Perkins, Buffalo, N. Y..... 198
Lighting, Investigation of Lansing Street. I. 146
Lighting, Ornamental Street..... 305
Lighting Rates for Johnstown and Gloversville, N. Y..... 305

Lighting Standard, The Corinthian, Chosen by Government. M. 408
Lighting Stations for Small Towns, Equipment of. By Carl D. Hoskins, of Schenectady, N. Y..... 450
Lighting in Warren, O., Ornamental
Los Angeles, Municipal Power Plant Recommended For..... 475
Los Angeles Refuse Disposal..... 480
Street 400

Macadam Roads in California. I. 143
Macadam and Asphalt Paving, Cost of. Q. 43
Manufacturers Export Association, The 316
Manufacturers Seeking Change in Location. Q. 43
Maps, Method of Maintaining and Correcting Assessment. W. 292
Maps of Underground Structures. Q... 373
Market, Des Moines, Municipal..... 309
Mason City, Ia., Paving in..... 461
Methylene Blue, Sewage Tests With. Q. 373
Milwaukee, Free Legal Aid in..... 465
Mixers for Asphalt Paving Materials, Concrete. Q. 211
Monuments, Metal Set in Concrete Walks. Q. 212
Contracting Practices..... 421
Municipal Congress and Exposition, The 151, 315
Municipal Efficiency Bureaus..... 309
Municipal Government in Europe, Forms of. By Robert W. Speer, Denver, Colo. 256
Municipal Improvements, American Society of.....226, 288, 394

MUNICIPAL MATTERS IN COURT.

Decisions of the Higher Courts of Interest to Municipalities.

Advertisement for Bids is Regular, Contracts Not Legal Unless The.. 217
Appraisal is not entitled to Compensation for Dilatory Work, Board of 463
Assessed Improvement Work, City Responsible for..... 464
Assessing for Sidewalks Within Street Intersection Area. Q. 458
Assessments for Public Improvements 140
Assessment for Public Sewer may Not be Vacated by Reason of Private Sewer..... 218
Assessment of Cost of Repaving a Street May be Made..... 218
Assessment, Trespass Does Not Invalidate Sewer..... 218
Assessment, Partially Invalid..... 296

Barriers, City must not protect grass plot by injurious..... 464
Bathing in Public Water Supply.... 218
Bidding by Councilmen on City Work constitutes Fraud..... 56
Blueprints, Remedies for Overprinted. Q. 459
Board of Works, Power Of..... 296
Bond Election void if its different questions are not separately stated 464
Bonds, Different Bonding Questions Must be Submitted Separately.... 217
Bond, Advance Payment on Construction Contract does not Relieve Surety 378
Bonds for Acquiring Public Utilities, Rights of Cities to Issue. L. 56
Bridge is Street Improvement, Reconstruction of..... 219

Channel for water supply, City must maintain adequate..... 464
City Buying Land for a Street, Rights of a. L. 55
City not Liable for Debts of Condemned Water Company insurred in process of Acquiring Company.. 55
Condemnation Proceedings, Damages on, Must be Prepaid..... 463
Condemnation of Property for Water Works 141
Condemnation of Land, Damages For 141
Condemnation. Lands May Be Appropriated By Ordinance..... 219
Contract. A Water Company's Charter Constitutes A..... 140
Contract is Let. Substitution in Specifications by Authority of an Official May Not be Made After..... 140
Contract, City Not Liable for Loss Under a Rescinded..... 140
Contracts Not Legal Unless Advertisement for Bids is Regular..... 217
Contract Does Not Relieve on Surety Bond, Advance Payment on Construction 378
Contracts Invalidates Tax Bill, Unreasonable Delay in Paving..... 218
Contract With City For Indefinite Period Can Be Voided..... 218
Contract Work, Liability For Excessive Part Payment On..... 296
Contract, What May Be Included in Sidewalk 219
Contract, Extras Must Be Paid When Provided In..... 462
Contractor Not Responsible For Injuries if Warning Signs are Stolen 463
Contractor's Cook is Not Connected with Work..... 463
Contractor, Pavement Guarantee Does Not Give Sole Right to Repair to.. 56
Contractor Under Pavement Guarantee, Liability of..... 56
Contractor, City Not Liable for Delaying 55
Contractor's Indebtedness, City Not Responsible For..... 296
Corporation Fined for Obstructing River 465
Counsel, City May Employ Associate 141
Councilman Ousted for Cause, May be Re-elected..... 462
Damages for Condemned Land..... 141
Damages, Value of Improvement May Not be Credited Against..... 297
Discriminate in Supplying Service, Corporation May Not..... 296

Election Void if Its Different Questions Are Not Separately Stated, Bond.. 464
Engineering on Good Roads, Cost Of 460
Excavations Under Sidewalks, Maintenance of..... 56
Extras Must Be Paid When Provided in the Contract..... 462

Fire Damages Cannot be Obtained on Basis of Low Water Pressure..... 463
Fire Protection, Right of an Individual to..... 56
Fireworks Set Off Under Authority, City Not Liable For..... 217
Franchise Constitutes Alternative Courses of Action, Right to Purchase and Renewal Privilege of a. 463
Franchise, Continuation of the Right 55
Franchise, Right to Tap City Water Mains Is Not a..... 141
Franchise of Water Company Constitutes a Contract..... 140

Grade is Changed, Petition Necessary Before Street..... 463

Health Regulations, Validity of..... 218
Highway, Collection of Damages for Improper Use of..... 465

Improvements, Benefit of, May be Decided by Board of Works..... 296
Indebtedness Invalidated Purchase of Water Works, Attempt to Evade Limit of..... 378
Indebtedness, Water Rentals May Exceed Limit of..... 296
Indebtedness, City Not Responsible for Contractor's..... 296
Intersection Area, Who Should be Assessed for Sidewalks Within Street 458
Laundry Waste Is a Nuisance..... 378
Liabilities of Contractors Cease with

Acceptance of Work..... 297
Liability of Street Railway Company for Sprinkling Streets..... 55
Liability of Contractor Under Pavement Guaranty..... 56
Liability of City for Work by Independent Contractors..... 140
Liability of City for Unforseen Accidents Due to Natural Causes..... 141
Liability of City for Water Supply.. 379
Liability for Injury from Fireworks Set Off Under Authority..... 217
Liability for Negligence in Sewer Construction 217
Liability of City for Contractors' Indebtedness 296
Liability of City for Small Defects in Sidewalks..... 296
Liability for Excessive Part Payment In Contract Work..... 296

Meters. What Determines the Right to Unmetered Water..... 379
Meters, Right of Water Company to Install 217
Municipality Not Dissolved by Military Occupation 140

Ordinance, Lands May be Condemned by 219
Ordinance Must be Specific, Sidewalk 218

Patented Materials Do Not Limit Competition in Paving Award..... 142
Paving Award, Use of Patented Materials Does Not Limit Competition 142
Pavement Guarantee, Liability of Contractor Under..... 56
Public Improvements Must be Determined by Municipal Officers, Cost of..... 464
Public Service Commissions Upon Securities Operating Thereunder, The Effect of..... 461
Public Utilities, Rights of Cities to Issue Bonds for Acquiring..... 56
Purchase and Renewal Privilege of a Franchise Constitutes Alternative Courses of Action, Right to... 463

Rates, Rights of a Municipality in Fixing Water..... 57
Rate Reduction, The City Has No Right to Enforce Public Service... 141
Rental of a Tenant, Owner Not Liable for Water..... 462
Repaving Street May Be Assessed, Cost of..... 218
Rights of a Dismissed Appointive Officer 55

Service, Utilities Corporation May Not Discriminate in..... 296
Sewer Construction, Liability for Negligence in..... 217
Sewer, Not Ground for Vacating Assessment for Public Sewer, Private 218
Sidewalks, Maintenance of Excavations Under..... 56
Sidewalks, City May Locate Manholes in..... 140
Sidewalk Contract, What May be Included in..... 219
Sidewalks, Liability of City for Small Defects in..... 296
Specifications, Notice Required Concerning Things in..... 297
Specifications by Authority of Official May Not be Changed After Contract is Let, Substitution in..... 140
Specifications, City Not Responsible for Misinterpretations..... 142
Specifications, Water Works Must Meet 378
Sprinkling Streets, Liability of Street Railway Company for..... 55
Stream so as to Cause Injury to Property of Others, Individual May Not Obstruct..... 56
Street Grades for Public Necessity, The Right to Change..... 55
Street Railway Company for Sprinkling Streets, Liability of..... 55
Street, Right of a City Buying Land for a..... 55
Streets, Rights of a City to Vacate.. 55
Street Sewage from Water Appliances and Laundry is a Nuisance.. 378
Street, What Determines the Lay Out of..... 378
Street Railways by City, Regulation of 218
Street Railway Company Cannot Retain Unused Track..... 219

Tax Bill, Unreasonable Delay in Paving Contracts, Invalidates..... 218
Tracks, Street Railway Company Cannot Retain Unused..... 219
Trespass Does Not Invalidate Sewer Assessment 218
Trespass. Property Owners Consent Necessary to Install Drains..... 296

Waste Is Reasonable, Regulations to Prevent Water..... 462
Water, Municipality is Liable for Damage due to Diverted..... 463
Water Works is not a Governmental Function of the City, Maintenance of .a..... 57
Water Appurtenances on Property, Property Owner Responsible for... 297
Water Companies May be Taxed to Support a Municipal Plant, Private 462
Water Company incurred in Process of Acquiring Company, City Not Liable for Debts of Condemned.... 55
Water Company May Refuse Service for Non-Payment..... 141
Water Company to Install Meters, Right of..... 217
Water Course, Corporation fined for Obstructing 465
Water Mains is Not a Franchise, Right to Tap City..... 141
Water Pressure, Fire Damages Cannot be Obtained on Basis of Low.. 463
Water Rates, Rights of a Municipality in Fixing..... 57
Water Rental of a Tenant, Owner Not Liable for..... 462
Water Rentals May Exceed Limit of Indebtedness 296
Water, Right to Unmetered, What Determines 379
Water Supply, City Must Maintain Adequate Channel for..... 464
Water May Not be Supplied Outside of City Limits..... 140
Water Supply Plans Must be Submitted to State Board in New Jersey 297
Water Supply, City Not Liable for... 378
Water Waste Is Reasonable, Regulations to Prevent..... 462
Water Works, Right of Municipality to Condemn Property for..... 141
Water Works Purchase Invalidated by Attempt to Evade Debt Limit.. 296
Water Works Must Meet Specifications 378

Municipal Ownership in Birmingham, Eng. 308
Municipal Ownership in Wheeling, W. Va. 380
Municipal Ownership in Toronto..... 471
Municipal Power Plant Recommended for Los Angeles..... 475
Municipal Railway, Calgary's. I. 149

Odors, Sewage Disposal with Respect to Offensive. By George W. Fuller. 27, 116
Ohio State Experimental Road..... 179
Ohio State Experimental Road..... 286
Ohio State Highway Organization..... 276
Oklahoma City, Water Works Problem Settled 483
Parks, Title to Recorded Reservations for. Q. 46
Patents on Apparatus and Tools for Cement Workers. M. 160

Patents on Road and Pavement Construction, and Repair. M. 410
Patents on Water Proofing Concrete. M. 160
Paterson, N. J., Bids for Garbage Plant at 483
Pavement and Curb and Gutter Measurements. Q. 210
Pavement in Chicago, Repairing Asphalt 478
Pavements Best for Steep Grade. W... 214
Pavement, Bituminous Concrete. By H. B. Lykken, of Grand Forks, N. D. 345
Pavement, Bituminous Concrete. By Geo. C. Warren, Boston, Mass..... 349
Pavement, Concrete with Bituminous Wearing Surface. W. 376
Pavements, Concrete for Bituminous Wearing Surface. W. 215
Pavement, Contraction and Expansion in Wooden Block. W. 294
Pavement Construction and Maintenance, Distributing and Mixing Machinery for. By Arthur H. Blanchard, New York City..... 354
Pavement, Contraction and Expansion of Brick. By Will P. Blair, Cleveland, O. 272
Pavement, Discussion of the Best Form. By J. C. Travilla, St. Louis, Mo. 194
Pavement, Durability of Bitulithic. Q. 43
Pavement, Notes and Queries on Grouted and Sand-Filled Brick. By Maury Nicholson, Birmingham, Ala..... 269
Pavement, Proposed Method of Treating Block for Wooden. W..... 375
Pavements and Roads to Local Rural Conditions, Adaptation of. By Nelson P. Lewis, New York City..... 426
Pavement, Standard Tests for Asphaltic cement for Sheet Asphalt. By J. W. Howard, New York City..... 342
Pavement for Steep Grade. W..... 135
Pavements, The Width of Street. I. The Influence of Sub-structures. By George S. Webster, chief engineer, Philadelphia, Pa. II. The Influence of Surface Conditions. By George W. Tillson, consulting engineer, Borough of Brooklyn, N. Y..... 31
Paving Investigation, Chicago. E..... 126
Paving Mixtures, Manipulation in Analyzing. Q. 130
Paving, Mixing Concrete for Street. W. 50
Paving Specifications for Wood Block. Q. 374
Pennsylvania Highway Laws..... 466
Personal Notes.....153, 228, 318, 399, 489
Pipe, Depreciation in Cast Iron. Q.... 211
Pipe, Steel and Cast Iron. By Allen Hazen, consulting engineer, New York City 9
Planning, The Relation of Technical Men to City..... 453
Pneumatic Pumping Plant at Shirley, Ind., An Automatic..... 278
Pollution of Streams by Manufacturing Waste. By William S. Johnson, New York City..... 197
Posts, California, Concrete Ornamental.. 475
Power Plant of Richmond, Va., The Municipal 434
Profit Sharing in Municipal Gas Plant... 475
Public Service Industries in Wisconsin, Field Inspection of. By J. H. Roemer, Madison, Wis..... 282
Public Service Commissions Upon Securities, of Companies Operating Thereunder, The Effect of. E..... 455
Public Utility Commissions, Causes and Effects of. By J. H. Roemer, Madison, Wis. 112
Pump, The Harold L. Bond, Contractors' Power. M..... 402
Pumping Plant at Shirley, Ind., An Automatic Pneumatic..... 278

Quick Sand, Foundation for Sewer in. Q. 210
Railroad Electrification, St. Louis, A Report on..... 307
Rates in Small Cities, Water. Q..... 131
Rates, Books on Water and Water Works Management. Q..... 291
Rates and Economy, Central Electric Station Power. W..... 52
Rates for Gas in Chicago..... 228
Rates for Gas in Chicago. E..... 206
Rate for Gas in Milwaukee Reduced... 225
Rates for Lighting Johnstown and Gloversville, N. Y..... 305
Rattler, The Standard Brick. M..... 403
Reinforced Concrete Floor. Q..... 42
Refuse Disposal, New York's Economical 33
Refuse Disposal in Gerlin, Germany.... 476
Refuse Disposal in Los Angeles..... 480
Refuse Incinerator, Milwaukee. I..... 148
Refuse and Sewage, Disposal of. Q... 289
Repairing Asphalt Pavement in Chicago. 478
Richmond, Va., Municipal Power Plant 434
Road Surface and the Automobile. M.. 155
Road Building, Practical. By John N. Edy of Billings, Mont..... 432
Road Builders' Convention, The American 486
Road Construction about Cleveland and Buffalo, Brick..... 364
Road Construction, Problems of. By W. W. Crosby, of Baltimore, Md..... 447
Road Construction with Calcium Chloride 401
Roads, Cost of Engineering on. Q.... 290
Roads, Cost of Engineering on Good... 460
Roads, The Dust Problem in Great Britain's. I. 144
Road, Gutter for Steep Dirt. Q..... 289
Roads, Macadam, in California. I..... 143
Road Machinery and Material Manufacturers, National Association of..... 491
Road Materials, The A. P. Spreader for Bituminous. M. 324
Road Roller, Motor. M..... 320
Roads, Their Care and Repair, Country. W. 51
Road Preservation and Dust Prevention, Experiments in. I..... 146
Road, Recent Progress in the Good Roads Cause..... 468
Road, Recent Progress in the Good Roads Cause. Mississippi to New Mexico... 468
Road Work, Spreading Dump Cars for. M. 404
Road Work, The Eclipse Concrete Mixer on Bituminous. M..... 405
Roads and Pavements to Rural Conditions, Adjutation of. By Nelson P. Lewis, New York City..... 426
Roads, Recent Progress in Good Roads Cause 382
Road, Proposed Interstate..... 224
Road, The Barrington, R. I., Experimental 439
Roads in New Jersey and Their Repair. By James Owen, Newark, N. J. 352
Roads in South Georgia, Good. I..... 145
Road, The Ohio State Experimental... 179
Road, The Ohio State Experimental... 286
Road Improvements in Eastern Pennsylvania, National..... 382
Road Improvement in the States from Alabama to Minnesota Inclusive..... 382
Road Congress of American Association for Highway Improvements at Richmond, Va. 392
Road Builders Association Meeting at Rochester, N. Y., American..... 397
Road Building in Venzuela..... 313
Road Builders' Association, The American 316
Rochester's Street Improvement Record 468
Roller, The Buffalo Pitts..... 492
Ruddle or Natural Chalk. Q..... 373

Sanitary Regulation, Power of the State to Control Use of Property By..... 298
Scale and Truck Order, Large. M..... 319
Sewage Disposal with Respect to Offensive Odors. By George W. Fuller, New York City.....27, 116, 192

Sewage, Disposal of Single House. Q... 42
Sewage Disposal in Bowling Green. I. 149
Sewage Disposal Plant, Small. Q..... 373
Sewage Ejectors, Electric. M..... 235
Sewage Ejector. M..... 406
Sewage and Refuse, Disposal of. Q... 289
Sewage, A Rotary Sieve for. By Robert Grimshaw, Dresden, Germany..... 275
Sewage Solids, Disintegrator for. Q... 373
Sewage Tests Methylene Blue. Q..... 373
Sewage at Oklahoma City, Electrolytic Treatment of..... 460
Sewage Treatment, Who Supplies Chloride of Lime for. Q..... 48
Sewer in Quicksand, Foundation for. Q. 210
Sewer in Newark, N. J., Rebuilding an Old Brick. By Edward S. Rankin, Newark, N. J..... 284
Sewers, Cleaning Catch Basins and by Pump. Q. 43
Sewer Construction, Liability for Negligence in..... 217
Sewer Computation Diagrams. M..... 319
Sewer Computation Diagram, Explanation of. Q..... 459
Sewer Connections, Right of City to Charge for. Q..... 44
Sewer Joints, Jute in. Q..... 48
Sewer Joint, A Flexible Water-tight. M. 233
Sewer Scrubber and Scraper. By Dr. Robert Grimshaw, Dresden, Germany.. 196
Sewer System Constructed at Grand Junction 312
Sewer, Size of Branch of Sanitary. Q.. 44
Sewer Work, Inspector's Notes on. Q.. 130
Sewerage Plans of Ligonier Approved.. 311
Specifications, Where to Obtain Standard. Q. 44
Specifications, Standardizing. E..... 370
Sprinkling Street in Denver, Colo..... 115
Standardizing Specifications. E..... 370
Standardizing Paving Specifications, The American Association for..... 488
Steel, Non-Corrosive Sheet. M..... 157
Streams, Illinois Law for Straightening. Q. 212
Streets, Bituminous Surfaces for City Macadam. By J. C. Travilla, St. Louis, Mo. 194
Street Cars, Systems of Marking..... 63
Street Cleaning Machinery, The Menzies. M. 404
Street Cleaning, An Automatic Dump Cart for. M..... 408
Street, How to Compute Excavation for Grading. Q..... 48
Streets, Drainage of Flat. Q..... 46
Streets, Dust and Its Prevention on. By Prof. Arthur H. Blanchard, Providence, R. I. 114
Streets on Hills, Breaking Grades of. Q. 47
Street Illumination, Investigation of Lansing. I..... 146
Street Improvement Record of Rochester 468
Streets and Open Places, The Illumination of. By E. Darrow, Consulting Engineer 34
Street Lighting, Ornamental..... 473
Street Lighting in Vancouver..... 474
Street Lighting in New Zealand..... 472
Streets, Movement to Prevent Injury to.. 382
Street Railway, Winnipeg Contemplates Owning 307
Street Railways—Report of St. Louis United Railways Investigating Committee 64
Street Signs in London..... 480
Street Sprinkling in Denver, Colorado... 115
Street Sweeping Machine, A Foreign (Vienna). G. 61
Subways, Term of Lease for Boston..... 200
Silting of Drainage Ditches, How to Prevent. Q. 130
Sludge, Disposal of and Removal of Suspended Matter in Sewage. By Geo. W. Fuller, New York City..... 192
Smoke, International Association for the Prevention of 150
Tar and Oil Spraying Machine, The Johnston. M. 321
Tar as a Dust Preventive, English Use of. 63
Technical Associations.151, 227, 317, 397, 489
Technical Schools.....153, 317, 398, 488
Toronto, Ont., The Water Filtration Plant at 445
Track, Concrete Base for Steam Railroad. W. 132
Trade Notes. M.....111, 160, 236, 325, 409
Trade Publications. M....159, 235, 325, 408
Turbine Driven Pumps, Comparative Tests of Engine and. M..... 320

Utilities, Financing of Public. By Robert J. Graf..... 203
Waste, The Pollution of Streams by Manufacturing. By William S. Johnson, New York City..... 197
Waste of Water in Buffalo, N. Y..... 102
Waste of Water in Memphis, Tenn., Investigations of. By Carl E. Davis.... 104
Water in Bangor Fire, Consumption of.. 302
Water in Buffalo, N. Y., Waste of..... 102
Water Cooler, A Power. M..... 319
Water Filtration Plant at Toronto, Ont.. 445
Water, Investigations of Waste of, in Memphis, Tenn. By Carl E. Davis... 104
Water Meter, Who Has Control of. Q.. 45
Water Meter, The Simplex. M..... 156
Water Pipe, Lead Wool for Jointing. M. 154
Water Plant, Municipal, in Monrovia, Wis. 380
Water-proofing, An Efficient. M..... 322
Water-proofing Concrete, Patents on. M. 160
Water Purification Plant, Grand Rapids, Mich., Municipal. By J. W. Armstrong, New York City..... 429
Water Purifying Plant, The Chara. By James Scott 301
Water Rates and Water Works Management, Books on. Q..... 291
Water Rates in Small Cities. Q..... 131
Water, Right of a City to Sell Beyond Boundaries 142
Water Supply System, Duplicate. Q.... 210
Water Supply for Pittsburg, Increased... 302
Water Supply of Los Angeles, Disposal of Surplus 302
Water Supplies by Compressed Air. Q.. 130
Water Supply Furnished by City, How to Measure. Q. 130
Water-tight Sewer Joint, A Flexible. M.. 233
Water Waste. E..... 125
Water Works Plant, Methods of Keeping Records of Improvements to Established. By Charles Carroll Brown.... 13
Water Works Problem in Oklahoma Settled 483
Water Works System of New London, O.. 380
Water Works, Electric Light and Ice Plant at Loveland, O. By Frank P. Perkins, Buffalo, N. Y..... 198
Water Works Questions, Court Decisions on. Q. 291
Water Works Case, The Laporte, Ind.... 219
Well Through Sand, Sinking. Q..... 42
Width of Street Pavements, The. I. The Influence of Substructures. By George S. Webster, Chief Engineer, Philadelphia, Pa. II. The Influence of Surface Conditions. By George W. Tillson, Consulting Engineer, Borough of Brooklyn, N. Y..... 31
Winnipeg, Can., Municipal Power Plant.. 461
Wooden Block Pavement, Expansion and Contraction in. W..... 294
Wooden Block Pavement, Proposed Method for Treating Block for. W..... 375
Wood Block Paving, Specifications for. Q. 374
Wooden Poles with Concrete Reinforcing 461

Classified Advertisements Pay

If you are seeking employment, have second-hand machinery for sale, want to purchase machinery or supplies, want competent men to fill responsible positions, or have proposals to advertise, an ad. in these colums will put you in touch with responsible parties who can supply your wants.

RATES:

Want Ads. 1½ cents per word.
For Sale Ads. 25 cents per line.
Proposal Ads. 15 cents per line.
Minimum, 50 cents.

Rates on Display Ads. on Application.

Municipal Engineering Co., - Indianapolis, Ind.

FOR SALE—Buff & Buff Engineer's Transit. Full vertical arc. Solid silver graduations. Gradiemeter attachment. Used one year. Rod, tape, etc. Write for prices and full description. H. L. Andrews, Harrold, S. D.

WANTED—Graduate in civil engineering, 1911, desires position with contracting or consulting firm. Single; 23. Will go anywhere. Open for engagement December 1, 1911. Can furnish references. Address S. E. L., care of Municipal Engineering, Indianapolis, Ind.

WANTED—A position as superintendent of water company, by a young man who is not afraid to work. Have had about ten years' experience in water works engineering, surveying, mapping and bookkeeping. Have also done considerable sewer work and other engineering work for borough. Best of references as to character, reputation and ability. Salary moderate. Address, Israel R. Burt, Port Allegheny, Pa.

NOTICE TO SEWER CONTRACTORS.

Sealed proposals, addressed to the Village Clerk and indorsed "Proposals for constructing Sewers and Sewage Purification Works," will be received by the Village of Pleasant Ridge, Hamilton County, Ohio, until twelve (12) o'clock noon of Saturday, the 16th day of December, A. D. 1911, and then and there for furnishing the necessary tools, labor and materials and constructing the proposed sanitary sewer system and sewage purification works according to the plans and specifications therefor on file in the office of the Village Clerk.

Each bid must be accompanied by a cash deposit or a certified check on some solvent bank, payable to the order of the Village Clerk, for an amount equal to five (5) per cent. of the aggregate amount of the proposal, as a guaranty that if this proposal is accepted a contract will be entered into and the required bond will be furnished for the satisfactory execution of the work.

Plans and specifications can be seen and forms of proposal can be obtained either at the office of the Village Clerk or the engineers, the Riggs & Sherman Company, 13 the Nasby Building, Toledo, Ohio.

The Council reserves the right to reject any or all bids.

By order of the Council.

H. B. HAYDEN, Village Clerk.

Pleasant Ridge, Ohio, November 16, 1911.

OFFICE OF CITY CONTROLLER,
McKEESPORT, PA.

Sealed proposals will be received at the office of the city controller until 7:30 p. m., Monday, December 27, 1911, for the following:

An 8-inch terra cotta sewer in Franklin avenue, from Robinson street to Fayette street, and on Fayette street, from Franklin street to Fawcett street.

A 15-inch terra cotta sewer on Archer street, from Havilla street to Wayne street, and Wayne street, from Archer street to West Sixth avenue.

An 8-inch terra cotta sewer in Fawcett street, from Fifth avenue to Robinson street.

Bond in the sum of three thousand dollars must accompany each proposal.

Plans and specifications on file in the office of the city engineer.

The city reserves the right to reject any or all proposals.

C. E. SOLES,
City Controller.

NOTICE TO BRIDGE CONTRACTORS.

Sealed proposals will be received at the office of the auditor of Union county in Creston, Iowa, up to 1:30 p. m., Thursday, January 4th, 1912, for the furnishing of material and construction of all bridges which may be ordered by the Board of Supervisors of said county during the year 1912, bids to be in accordance with plans and specifications on file in the auditor's office. Also a separate bid for all structural material and for 3-inch Oregon fir flooring per M, and for Red Cedar and steel piling A. B. & C. per lineal foot. All material to be priced F. O. B. Union County, also in place.

Also proposals for the erection of cement culverts or bridges over 6-ft. in length, and cement or concrete abutments under bridges as ordered, on a cost plus percentage basis.

All proposals to be submitted on uniform blanks to be furnished by the county. The Board of Supervisors reserves the right to erect all bridges under 40 foot in length at their option and the right to erect cement or concrete abutments. The right to reject any or all bids or any part of any bid is reserved. Bids will be opened and considered at 1:30 p. m. on Thursday, January 4, 1912. A certified check for $200 must accompany each bid as an evidence that contract will be entered into, if awarded , the same to be forfeited to the county in case of failure to enter into suc hcontract, otherwise to be returned to the bidder.

By order of the Board of Supervisors, November 13, 1911.

E. G. Smeltzer, County Auditor.

Approximately 310,000 square yards of either asphalt, bitulithic or concrete pavement will be laid by Boise, Idaho, during 1912.

Address any inquiries to the

CITY CLERK.

ENGINEERING PROPOSALS

The Bureau of Technical References

will issue gratis **Condensed Summary Record Index Cards**, with or without **Abstract Titles of Experience Records**, to any employer writing or wiring specifications for Expert Assistance.

AMERICAN SERVICE COMPANY

State Representatives
Foreign Correspondents

Pittsburgh, Pa.